

What is Claimed is:

- 1 1. A pluggable bi-directional transceiver with a single optical fiber, comprising:
 - 2 a sub-assembly module of optical transceiver connected with an optical fiber for
 - 3 receiving and transmitting optical signals;
 - 4 a printed circuit board (PCB) connected with said sub-assembly module, also
 - 5 connected a communication equipment under pluggable condition for exchange of
 - 6 signals between said sub-assembly module and said communication equipment;
 - 7 a main frame located above said sub-assembly module and said PCB for fixing and
 - 8 protecting said module and said PCB;
 - 9 a tab for pulling said transceiver out of said communication equipment;
 - 10 a tab-base provided with an anchoring member for fixing said transceiver onto said
 - 11 communication equipment;
 - 12 a lower cover located under said module and said PCB for fixing and protecting said
 - 13 module and said PCB; and
 - 14 an upper cover located above said main frame.
- 1 2. The transceiver according to claim 1, in which said sub-assembly module further
 - 2 comprises:
 - 3 an optical fiber as a medium for transmitting optical signals;
 - 4 a laser-diode transmitter for converting electronic signals into optical signals and
 - 5 transmitting the same outwardly;
 - 6 a signal receiver for receiving optical signals and converting the same into electronic
 - 7 signals;
 - 8 a wavelength division multiplexer (WDM) located among said laser-diode

9 transmitter, signal receiver, and optical fiber for separating optical signals of different
10 wavelengths;
11 a supporting rack for supporting said WDM;
12 a casing for fixing and protecting said laser-diode transmitter, signal receiver, and
13 WDM; and
14 an optical-fiber connector connected with said optical fiber.

1 3. The transceiver according to claim 2, in which the laser-diode transmitter of said
2 sub-assembly module is provided with a lens device.

1 4. The transceiver according to claim 2, in which the laser-diode transmitter of said
2 sub-assembly module is provided with a lead wire for connecting with the
3 conductive pins of said PCB.

1 5. The transceiver according to claim 2, in which the signal receiver of said sub-
2 assembly module is provided with a lens device.

1 6. The transceiver according to claim 2, in which the signal receiver of said sub-
2 assembly module is provided with a lead wire for connecting with the conductive
3 pins of said PCB.

1 7. The transceiver according to claim 2, in which the supporting rack of said sub-
2 assembly module is made of a plastic material.

1 8. The transceiver according to claim 2, in which the casing of said sub-assembly
2 module is made of a metallic material.

1 9. The transceiver according to claim 2, in which the optical-fiber connector of said
2 sub-assembly module further comprises a fiber-guiding tube, a ceramic sheath, and a

3 metallic sleeve, in which said fiber-guiding tube is located at a tail end of said optical
4 fiber and connected with the same; said ceramic sheath encloses said fiber-guiding
5 tube; and said metallic sleeve encloses said ceramic sheath.

1 10. The transceiver according to claim 1, in which said main frame is made of a zinc
2 alloy, capable of preventing electromagnetic interference (EMI).

1 11. The transceiver according to claim 1, in which said lower cover is made of a metallic
2 material, capable of preventing EMI.

1 12. The transceiver according to claim 1, in which said upper cover is made of a metallic
2 material, capable of preventing EMI.

1 13. The transceiver according to claim 1, in which said tab-base is made of a plastic
2 material.